

ABSTRACT

The present invention has as its object to stably produce a high strength electrical steel sheet and a processed part of the same which is high in strength and has wear resistant and is superior in magnetic flux density and core loss without greatly changing the cold rollability and production processes from those of conventional electrical steel sheet and provides a high strength electrical steel sheet characterized by containing, by mass%, C: 0.06% or less, Si: 0.2 to 6.5%, Mn: 0.05 to 3.0%, P: 0.30% or less, S or Se: 0.040% or less, Al: 2.50% or less, Cu: 0.6 to 8.0%, N: 0.0400% or less, and a balance of Fe and unavoidable impurities and containing in the steel a metal phase composed of Cu of a size of 0.1 μm or less. The method of production of the same comprises holding in a temperature range of 300°C to 720°C for 5 seconds or more for heat treatment.